NASA Procedural Requirements

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Subject: NASA Radio Frequency (RF) Spectrum Management Manual

Responsible Office: Space Operations Mission Directorate

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Chapter 5: NASA Long-Range Spectrum Planning

5.1 Background

5.1.1 The NASA Spectrum Policy and Planning Director (NASA HQ/OSF) is responsible for the planning of long-term national and international spectrum management initiatives aimed at improving the spectrum management environment within which the Agency must operate. The Agency Spectrum Program Manager is responsible for implementation of these initiatives. For instance, in cases where new frequency allocations or changes to the national and international radio regulations are required, lead times of more than a decade may be necessary since periodic ITU conferences that are competent to make such changes are usually limited in scope. For this reason, and to permit the Agency to continue to operate in compliance with section 1.2 of this NPG, the Agency Spectrum Program Manager must be aware of new concepts, which may require spectrum support with sufficient time available to accomplish changes.

5.1.2 Considering typical design and construction periods, it is essential that appropriate spectrum be allocated a minimum of 5 years prior to anticipated launch dates for all Agency missions. Since new allocations may take as much as 10 years to realize, it is essential that the Agency Spectrum Program Manager be informed of new mission concepts as early as possible so that appropriate allocation initiatives may be identified.

5.2 Long-Range Planning

5.2.1 General

In light of potential long lead time requirements for some new mission concepts, the Spectrum Policy and Planning Director maintains a long-range spectrum forecast in order to identify needed spectrum management initiatives in a timely manner. All dates are driven, primarily, by the anticipated agendas of World Radiocommunications Conferences (WRCs) and projected launch dates of particular missions. NASA expects that many mission RF spectrum needs will be satisfied by existing allocations. However, for some missions, changes in international and national regulations may be required to support new and entirely unique operations in the future (such as operations on or in the vicinity of the far side of the moon or for radio links between a transatmospheric vehicle and the Earth). To this end, the long-range spectrum forecast attempts to identify dates at which consideration of these matters needs to be completed if NASA is to operate in an interference-free environment.

5.2.2 Enterprise Office Responsibilities

5.2.2.1 For future Agency missions, it is the responsibility of each NASA Enterprise Office through the FMLG to provide the latest conceptual communications requirements to the Agency Spectrum Program Manager in respect of programs and future mission concepts over which they may have cognizance. This information should be provided from the inception of the conceptual mission and updated as the program evolves.

5.2.2.2 The Agency Spectrum Program Manager will provide an assessment of the spectrum requirements in consultation with the concerned program office with sufficient lead-time to allow appropriate regulatory action.

5.2.2.3 Each Headquarters Enterprise Office should provide updated mission concepts and new anticipated launch dates to the Agency Spectrum Program Manager via direct consultation or via the FMLG.

5.2.3 Center Responsibilities

5.2.3.1 For future Agency missions, it is the responsibility of each Center Spectrum Manager to provide the latest conceptual communications requirements to NASA GRC Spectrum Management Office, with respect to projects and future mission concepts over which the Center may have cognizance. This information should be provided from the inception of the conceptual mission and updated as the project evolves.

5.2.3.2 The Agency Spectrum Program Manager will provide an assessment of the spectrum requirements in consultation with the Center with sufficient lead time to permit appropriate regulatory action.

5.2.3.3 Each Center should provide updated mission concepts and new anticipated launch dates to the Agency Spectrum Program Manager via direct consultation or via the NASA Spectrum Managers Group annual meeting.

5.3 Support Program

5.3.1 The NASA Support Program effort was established to provide a mechanism whereby NASA could provide the necessary capability and expertise to help select required new spectrum, protect existing spectrum from encroachment by outside parties, and other related activities. The Terms of Reference is given in Appendix J.

5.3.2 The Support Program is concerned with the preservation of the spectrum that NASA currently uses to perform its critical mission. In particular, the services of interest to the Support Program effort are all those frequency bands that NASA uses to support its domestic and foreign programs.

5.3.3 The Support Program is also concerned about emerging NASA requirements for spectrum. As systems become more complex, there is a growing requirement for new spectrum to meet the mission needs. An example is the growing aerospace telemetry and video requirements.

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